

Channing (W.)

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A Case of Tumor of the Thalamus, with
Remarks on the Mental Symptoms.

BY

WALTER CHANNING M. D.,

Brookline, Mass.



REPORT OF A CASE OF TUMOR OF THE THALAMUS, WITH REMARKS ON THE MENTAL SYMPTOMS.*

By WALTER CHANNING, M.D.,

Brookline, Mass.

THE patient, an unmarried female, by occupation a teacher, and forty-one years of age, was admitted to my hospital for mental diseases, November 29, 1895.

Her history before admission was as follows: She was of a lively, energetic, nervous disposition, but not of neurotic heredity, and had been a successful teacher for many years. For twenty years she had had each year in June attacks of hay fever, followed by asthma. In the spring of '95 she took a variety of remedies of a certain "specialist for hay-fever," with the apparent result of checking the asthma, and improving her general health.

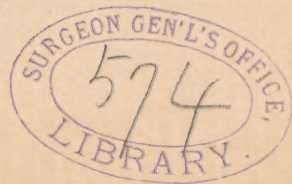
She has suffered from time to time from "nervous," or "sick-headache," and three years ago, having over-worked, she gave up teaching for eighteen months.

In September she took up her teaching in an academy, and at the end of the month stated, wrote that she was feeling especially well and enjoying her work, but the last of October, she wrote to a friend that she had completed seven, or eight weeks of the hardest class-work in her whole experience, and if she did not have a few days rest, she would "burst."

At this time when visiting some friends for a few days she was often seen to be more excitable and exhilarated than was natural to her. She made many extravagant speeches in efforts to be amusing, bought flowers, gave away presents, and spent money more freely than she could afford, or would ordinarily have done. She also talked about engaging in the work of rescuing fallen women, in an expansive kind of way.

She also had periods of depression, when she was nervous, and seemed exhausted. She complained at these times of a peculiar boring headache, back of the right

* Read at the Twenty-second Annual Meeting of the American Neurological Association.



eye, which had troubled her for about six weeks and was different from anything she had ever had. Insomnia was another symptom at this time.

Her friends were impressed by her unusual actions, but accounted for them by overwork and the nervousness resulting from the headache and loss of sleep.

November 4th she returned to her school, and taught as usual for two weeks, when she again felt the need of change and went away, for two days only, however, returning to her teaching again for another week, or up to Friday, November 22nd. The next morning she went to school, thinking it was Friday, though she was repeatedly told that it was Saturday. She took her place at her desk as usual, and was much surprised and confused when her pupils did not appear.

This was apparently the first positive indication that her friends observed of mental disturbance. Having been persuaded to make them a visit, she arrived looking entirely unlike herself. Her hat was on the back of her head, her hair dishevelled, her shawl dragging half its length on the ground. She went to the supper table without arranging her hair, or paying any attention to her personal appearance; was in high spirits, very effusive in what she said, and talked in a loud and unnatural voice. She said she had not slept for a week, and complained of her head aching.

The night following she took quieting medicine, and was a little nauseated once or twice. Occasionally she spoke of her head aching, but said little about it.

The following days until she was admitted to the hospital (Nov. 29th), she remained in bed, as she was too weak to sit up, and her left leg gave way when she tried to stand. The left arm was also noticed to be nearly useless. She was very restless in bed, continually throwing her right arm over her head, slept very little, and took almost no nourishment. Nausea occurred a few times, but not to a marked degree. Vision was supposed to be normal.

Mentally she was confused, but much exhilarated, and talked very frequently of what she thought should be done to alleviate the condition of working girls, and rescue fallen women, and she supposed herself possessed of large sums of money (the contrary being the fact), which could be used for such a purpose.

On admission to the hospital she was in a mildly exalted condition, talking somewhat disconnectedly, and



pleased and satisfied with everything about her. In bed she was restless, moving her head from side to side throwing her right arm over her head, and rigidly folding both arms across her chest, with her hands clenched and thumbs between the first and second fingers. The pupils appeared normal, and reacted to light, but she could not follow the moving finger. The eyes were not more carefully examined because of her restless and confused condition. The tongue, which she did not extend beyond the lips, was dry with brownish coat in the middle, and whitish at the edges. Pulse 104 and temperature 98.4°. Physical examination of the chest negative. Patella reflexes slightly exaggerated and alike on both sides. Planter reflex moderate. Sensation was not carefully tested as in the early stages of the disease, it was supposed to be acute mania with sensation in general perverted, and not possible to correctly estimate. Asked if her head pained her, she said she had three kinds of headache, and often she put her hand up to her head as if it ached, but the pain was never severe and never localized. Nausea occurred so seldom that it attracted little attention. The left arm and leg could be moved very little by the patient.

Examination of the urine gave the following results: Color normal, reaction acid, specific gravity 1022, urea normal, uric acid in excess. The sediment which was moderate in amount contained a few squamous epithelial cells and many round small cells, most of which were apparently blood corpuscles, frequently arranged in clumps.

Menstruation appeared the day after admission, was scant in amount and lasted several days.

The blood count four and six days after admission was: reds, 4,804,000; whites, 12,400.

The exaltation of the patient continued for several days after entrance. She said she was writing a series of articles which would make her reputation in this or another world, and she advised the doctor to read them. Everything pleased her that was done for her, and she was very polite in expressing her gratitude. Her state of mind was always one of contentment and happiness.

She had apparent hallucinations of taste and smell, often speaking of the bad smell of the food given her and its bad taste.

A few days later (December) she responded much more slowly when addressed, often would make no re-

sponse to questions, and much of the time was semi-somnolent, or in a deep sleep.

December 12th, she was lying very quietly in bed in a semi stupor, she could not be aroused to answer questions, but called the nurse by the name of her sister "Mollie," and could be made to look and listen, and take food by persistent effort. The arms were much of the time rigidly flexed across the chest, the left more than the right. With the right hand she spent much of the time picking at the blanket between the knees, so that she had literally worn it thread-bare at that point. The right eye was closed most of the time, though with an effort she could open it, and judging by the way she took her food could not see with that eye.

December 16th, it was noted that for two days the patient's eyes had been kept open more than before, and she had apparently noticed people who were in the room; she said, "Oh, dear!" and occasionally groaned. The contraction of the left arm was less marked.

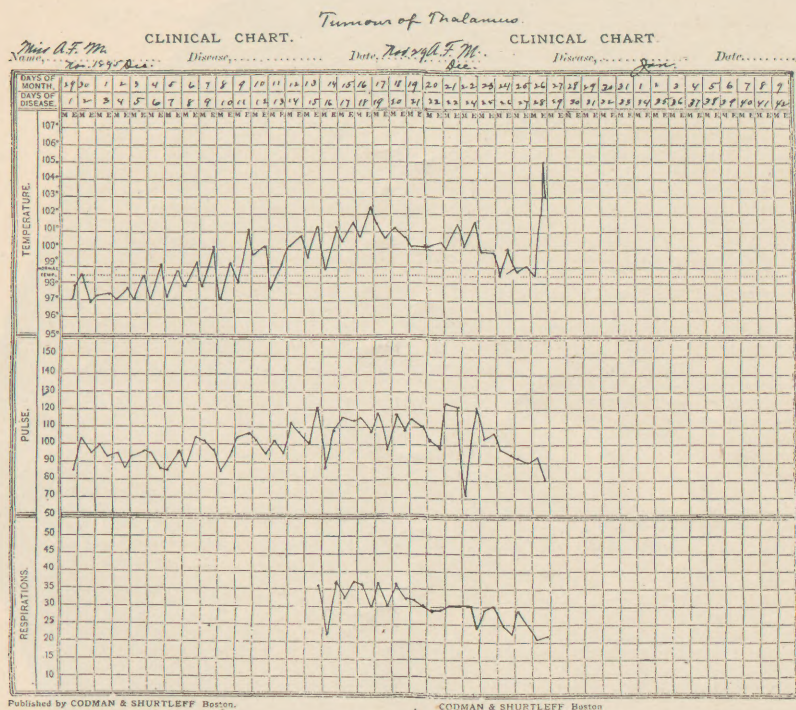
December 18th, the breathing was irregular, though not of the "Cheyne-Stokes" character. The expiration was longer than inspiration, and at times more forcible. The rigidity of the arms had disappeared and there was no more picking at the bed clothes. The right as well as the left leg she did not move.

On the 22d of December the patient was quite weak and her color bad. The pulse was irregular, changing in rate while she was lying perfectly still. One quarter of a minute it could beat at the rate of seventy, and the next quarter, perhaps, at the rate of one hundred. During the day it reached one hundred and twenty, and every time the position changed it would become immediately accelerated. The pupils varied in size during the day; sometimes the left would be more dilated than usual, and then again would be contracted, or the same changes might be observed in the right eye. The jaw began to drop, and soon was in a condition of almost complete relaxation. This interfered considerably with breathing. The legs lay straight and motionless, and the feet were in quite extreme extension.

December 25th, it was noted that the pulse and temperature had been gradually dropping, as will be seen by the appended chart. The dropping of the jaw as well as of the tongue had become more frequent and troublesome, interfering seriously with the breathing, so that there would sometimes be intervals of from six

to ten seconds between respirations. The following day the same difficulty again occurred; the breathing would stop when the jaw dropped, not to begin again until it was lifted forward. This was done repeatedly with the same result, until early on the morning of the 27th, when the breathing suddenly ceased not to begin again.

For the first two days after admission, the urine was retained; after that there was always incontinence.



There was no discharge from the bowel, the sphincter being entirely inactive.

The autopsy was made by Dr. E. Wyllis Taylor of Boston, the head only being examined. His report was as follows: "Skull rather thick, especially in the frontal region. Brain tense on palpation. Dura normal. Pia normal. No Leptomeningitis. Convolutions dry, flat, and somewhat smooth. At the base no evidence of meningitis. Pons appears somewhat flattened. On raising the temporal lobes the crura are found to be broad and

flattened and ribbon-like. On palpation there is a fluctuant sensation, which is bilateral.

On opening the right ventricle there is a boggy, cyst-like looking mass extending back an inch behind the posterior border of the optic thalamus, and forward to the junction of the caudate nucleus with the thalamus, the mass apparently involving the latter in its entire extent. (See figure) The consistency varies in different places; in some the sensation to the fingers is that normal tissue, in others that of cyst-like masses, apparently multiple.

The surface of the tumor (see figures) is for the most part injected, and gelatinous in appearance. The cortex is nowhere involved. The ventricles are normal in size and there is no increase of ventricular fluid."

In the report of the microscopic examination of the tumor made by Dr. Taylor sometime later, he states that "The growth consists of very numerous and rather small cells with round or oval nuclei. The cells are arranged without order. In many places the tumor is partially and completely necrotic, doubtless in a measure, at least, due to post-mortem changes. As was evident microscopically, the growth is exceedingly vascular. There are numerous new-formed vessels of large size, and many of smaller calibre, all filled with blood. Certain of the larger vessels contain thrombi, which are partially organized. In places there is considerable free blood to be seen, probably as a result of hemorrhage in the substance of the tumor. The growth is to be classed as a vascular glioma, probably of rapid growth."

Remarks.—This patient entered the hospital as a case of mild acute mania, which would probably develop and grow worse. Such was the diagnosis of the experienced alienist who had seen her, and recommended her removal to a hospital. Though mention is made in the above report of the left arm being nearly useless a few days before admission, nothing was said of this at the time, and I believe it to be an after-thought in looking back with the cause of death in mind, as the history has been obtained very recently.

The fact is undoubted that there was a plain history of at first slight exhilaration extending over some weeks, gradually increasing, and finally assuming the form of maniacal excitement with expansive delusions. The patient was put early to bed because of the weakness and exhaustion which had resulted from weeks of mental



over-activity and sleeplessness, but in bed there was an undue degree of motor restlessness, combined with the mental exhilaration, sometimes resulting in slight attacks of violence. The headache, which had been an early symptom, had almost disappeared; there was practically no nausea, and nothing unusual in the eyesight had attracted attention.

Such was the history up to admission to the hospital. During the first week there, or within three weeks of death, the mental symptoms were still prominent. The expansive delusions continued, and hallucinations of taste and smell, which made food obnoxious to her, were conspicuous.

As the physical symptoms of the brain lesion developed, the manifestation of the mental alienation grew gradually less and less, but as long as she had any power of expression the same happy, exalted underlying mental condition was apparent, a point of considerable interest. Though roused with difficulty, when she was finally aroused, even up to within twenty-four hours of death, she understood, at least, partly what was said to her, as she showed by the movements of her eyes, and her willingness to try to open her mouth and swallow food.

The mental symptoms produced in this case seem to have been quite unlike those of the usual cases of brain tumors recorded, in which are found depression, dullness, irritability, lethargy, stupor, or even pronounced dementia. It is a striking fact that up to within five weeks of death this patient was still actively pursuing her avocation of school-teaching, being at this time in a condition of over exhilaration, and having been so for weeks. Though she became confused and lost her grasp as to the relation of things, there was a tendency to mental over activity, instead of the opposite, and even to the end it seemed as if the patient would have responded to questions had her speech mechanism been unimpaired.

The first indication of cerebral disturbance to attract attention in this case, was psychical. There was the headache to be sure, and the possible ocular lesions, which might have been discovered had an ophthalmological examination been made, but the physical changes were not of a degree to interfere with the patient's activity, caused little or no inconvenience, and hence received no recognition.

Several interesting questions arise in such a case, as

for instance: Which symptoms probably first presented themselves, the mental or physical? Why should there be so much mental disturbance in such a case? Was the mental trouble an accident and independent of the tumor? If not, how can it be satisfactorily explained? What diagnostic value do mental symptoms possess in tumor of the brain?

The tumor must have grown very rapidly, and it appears to be a fact that the physical impairment was in inverse ratio to its size.

The writer thinks the criticism may be fairly made that the physical symptoms of probable tumor of the brain might have been found at an earlier period had they been carefully looked for. They existed, but were not discovered. Further, no adequate eye examination was made, which certainly was unfortunate. Recognizing fully the justice of these strictures, and regretting his lack of medical acumen, which did not put him on the right scent, it nevertheless is, he believes, true that the mental disturbance, which showed itself in this case, was unusual, both in kind and degree.

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